

Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-93 (canceled)

Claim 94 (withdrawn): A substrate cutting device comprising:

a base;

a cutter mounted on said base, said cutter being movable along a predetermined cutting path;

a substrate chute extending through said base to position the substrate in contact with said cutter;

a tower coupled to said base having a lower surface containing a recess therethrough, said recess being in alignment with said substrate chute;

a computer controller for controlling operation of said device.

Claim 95 (withdrawn): A substrate cutting device comprising:

a base;

a cutter mounted on said base, said cutter being movable along a predetermined cutting path;

a substrate chute extending through said base to position the substrate in contact with said cutter;

a tower coupled to said base having a lower surface containing a recess therethrough, said recess being in alignment with said substrate chute;

a clamping mechanism for keeping the substrate in contact with said cutter; and
a sensor arrangement for detecting prescribed conditions during operation of said substrate cutting device.

Claim 96 (withdrawn): A substrate cutting device comprising:

a base;
a cutter mounted on said base, said cutter being a movable along a predetermined cutting path, wherein said base comprises a slide mechanism for receiving said cutter, and wherein said slide mechanism moves said cutter along said predetermined cutting path;
a substrate chute extending through said base to position the substrate in contact with said cutter;
a tower coupled to said base having a lower surface containing a recess therethrough, said recess being in alignment with said substrate chute; and
a clamping mechanism for keeping the substrate in contact with said cutter.

Claim 97 (withdrawn): A substrate cutting device comprising:

a base;
a cutter mounted on said base, said cutter being movable along a predetermined cutting path;
a substrate chute extending through said base to position the substrate in contact with said cutter;
a tower coupled to said base having a lower surface containing a recess therethrough, said recess being in alignment with said substrate chute; and
a clamping mechanism for keeping the substrate in contact with said cutter, wherein said tower further comprises a second actuation unit for operating said clamping mechanism.

Claim 98 (currently amended): A substrate cutting device for producing substrate fibers that have a textured surface, a lengthwise grain, and a plurality of parallel striations along the grain, comprising,

- a cutter comprising a blade section;

- a clamping mechanism for holding a substrate having a lengthwise grain;

- a slide mechanism that is coupled to the cutter; wherein the clamping mechanism is disposed relative to the slide mechanism so that the slide mechanism slides substantially parallel to the a lengthwise grain of the a clamped substrate and the blade section contacts the substrate during operation of the cutting device;

- a pneumatically operated first actuation unit that moves the slide mechanism during operation of the cutting device;

- a pneumatically operated second actuation unit that positions the clamping mechanism;

- at least one fiber channel; and

- a controller, where the controller controls the first actuation unit and the second actuation unit.

Claim 99 (previously presented): The substrate cutting device of claim 98, wherein the blade section includes at least one row of teeth.

Claim 100 (previously presented): The substrate cutting device of claim 98, further comprising a sensor for detecting the prescribed conditions during operation of the cutting device.

Claim 101 (previously presented): The substrate cutting device of claim 98, wherein the controller varies a speed at which the slide mechanism slides during operation of the cutting device.

Claim 102 (previously presented): The substrate cutting device of claim 98, wherein the controller varies a force at which the blade section contacts the bone tissue during operation of the cutting device.

Claims 103-105 (canceled)

Claim 106 (previously presented): The substrate cutting device of claim 98, wherein the second actuation unit applies a force of 150 lbs-250 lbs to the clamping mechanism during operation of the cutting device.

Claim 107 (previously presented): The substrate cutting device of claim 98, wherein the second actuation unit applies a force of 200 lbs to the clamping mechanism during operation of the cutting device.

Claims 108-110 (canceled)

Claim 111 (withdrawn): The substrate cutting device according to claims 94, 95, 96, or 97, wherein the substrate is bone.

Claim 112 (previously presented): A method of producing substrate fibers comprising placing a substrate into the substrate cutting device of claim 98 and cutting substrate fibers from the substrate.

Claim 113 (previously presented): The method of claim 112, wherein the substrate is bone, bone tissue, or soft tissue.

Claim 114 (previously presented): The method of claim 113, wherein the substrate is plasticized.

Claim 115 (previously presented): The method of claim 113, wherein the substrate is freeze dried.

Claim 116 (previously presented): The method of claim 113, wherein the substrate is frozen.

Claim 117 (previously presented): The method of claim 113, wherein the method further comprises combining the substrate with glycerol prior to cutting.

Claim 118 (previously presented): The method of claim 113, wherein the bone is newly formed bone or implant bone.

Claim 119 (previously presented): The method of claim 113, wherein the substrate is derived from a mammalian source.

Claim 120 (previously presented): The method of claim 119, wherein the substrate is derived from a human.

Claim 121 (previously presented): The method of claim 120, wherein the substrate is bone tissue.

Claim 122 (previously presented): The method of claim 121, wherein the bone tissue is plasticized.

Claim 123 (previously presented): The method of claim 121, wherein the method further comprises combining the bone tissue with glycerol prior to cutting.

Claim 124 (new): The substrate cutting device of claim 99, wherein each tooth includes at least one predetermined cutting angle.

Claim 125 (new): The substrate cutting device of claim 124, wherein each tooth includes a primary cutting angle and a secondary cutting angle.

Claim 126 (new): The substrate cutting device of claim 125, wherein said primary cutting angle is between about 3° and about 6° .

Claim 127 (new): The substrate cutting device of claim 125, wherein said primary cutting angle is approximately 4° .

Claim 128 (new): The substrate cutting device of claim 125, wherein said secondary cutting angle is between about 10° and about 18° .

Claim 129 (new): The substrate cutting device of claim 125, wherein said secondary cutting angle is between about 12° and about 16° .

Claim 130 (new): The substrate cutting device of claim 125, wherein said secondary cutting angle is approximately 14° .